

REMARKS

The drawings are amended, per the attached Submission, to overcome a few noted informalities contained therein—to indicate that Figs. 3 and 5 depict different embodiments of the suspension system for the rear wheels. Corresponding amendments were entered in paragraphs [024], [029], [034] and [035] of the specification. New formal drawings, incorporating the requested amendments, will follow once the requested drawing amendments are approved by the Examiner. If any further amendment to the drawings or the specification of this application is believed necessary, the Examiner is invited to contact the undersigned representative of the Applicant to discuss the same.

This application is rejected under 35 U.S.C. § 112, first paragraph, for the reasons noted in the official action. The inadequate written description rejection is acknowledged and respectfully traversed in view of the following remarks. The specification is amended to more clearly distinguish between a first embodiment of the rear suspension system, as shown in Fig. 3, and a second embodiment thereof, as shown in Fig. 5.

Claims 1, 2, 4 and 11 are rejected, under 35 U.S.C. § 103(a), as being unpatentable over Weston `750 in view of Ericksson `181. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the following remarks.

In the combination of these references proposed by the Examiner, Ericksson `181 provides the basic structure of the vehicle. As described in the Ericksson `181 reference, each wheel is mounted on vertically swinging "pendulum arms" controlled by hydraulic actuators (see column 3, lines 1-2, lines 5-7, lines 20-22, lines 37-41). An automatic controller uses the hydraulic actuators to adjust the vertical swinging movement of the pendulum arms to keep the chassis level (column 3, lines 48-50).

It is the Examiner's view that these features of the Ericksson `181 reference meet the limitations of claim 1 of the current application relating to the vehicle's basic structure:

an elongate frame having opposed sides, and at least six independent support wheels positioned along the opposed sides of the frame, such that at least four wheels are always in contact with the ground to support the frame.

suspension for each of the support wheels including a support having a first end and a second end, the first end of the support being pivotally mounted to the frame, one of the support wheels being rotatably mounted to the second end of the support, and at least one shock absorber disposed between each support and the frame, to absorb shocks as the supports are forced to adjust to variations in terrain.

In the combination of these references proposed by the Examiner, Weston `750 provides a chemical applicator with an automatic motion dampening control system. The Weston `750 reference shows limbs 6 which are welded to a central plate 7 (see column 2, lines 23-25). A pivot pin 15 is inserted into aligned apertures in plates 7 (see column 2, lines 40-41). Tubes 17 extend outwardly in either direction and approximately three quarters of the way along each tube 17, there is provided a height adjustable ground engaging member 23. The ground engaging members 23 are not intended to rest on the ground at all times, but are intended to be set so that on horizontal ground there is reasonable ground clearance (see column 2, lines 66 through column 3, line 5). Two single acting shock absorbers are symmetrically positioned on each side of pivot pin 15 (see column 3, lines 5-10). When traversing ground, which is inclined laterally in relation to the direction of travel of the vehicle, one of the ground engaging members 23 will strike the ground before the boom does. This will result in a pivotal movement about pivot pin 15, with the movement being controlled by one of shock absorbers 26 (see column 3, lines 24-30).

It is the Examiner's view that these features from the Weston `750 reference meet the limitations of claim 1 of the current application relating to the automatic motion dampening of the chemical applicator:

"an automatic motion dampening control system controlling the positioning means to constantly reposition the chemical applicator mounting platform to dampen disruptive motions and average surface roughness oscillations that can not be dampened by the suspension."

As best understood, the Ericksson `181 vehicle automatically adjusts to maintain a level orientation when traversing a slope. The Weston `750 boom, when encountering a slope, will be deflected when the ground engaging members 23 contact the side of the slope. This deflection movement caused contact between the ground and the engaging members 23 is dampened by shock absorbers 26.

The Applicant acknowledges that the combination of these references may arguably relate to the features indicated by the Examiner in the official action. Nevertheless, the Applicant respectfully submits that the combination of Weston `750 with Ericksson `181 still fails to in any way teach, suggest or disclose the distinguishing features of the presently claimed invention, as discussed below. As such, all of the raised rejections should be withdrawn at this time in view of the above amendments and remarks.

The Applicant respectfully submits that the combination of the applied references Ericksson `181 with Weston `750 does not disclose the limitations as claimed in the current application. In particular, as currently recited, the chemical applicators of the all terrain vehicle are mounted on a platform, which is adjustable to permit an operator to select an orientation of the chemical applicators relative to the terrain. In contrast, the operator of the spraying booms, as disclosed in the Weston `750, simply cannot adjust the spraying booms at an angle to suit variations in the slope of the terrain, prior to starting out. In fact, no adjustment in the boom takes place until ground engaging members strike the ground and alter the angle of the boom. This is a most undesirable situation. To adjust the distance between the ground and the boom, the operator needs to get off the tractor and manually alter the height of each to the ground engaging members on each boom. This distinction, between the presently claimed application and the applied references, is important because, in use, manually actuated

systems, such as that taught by Weston `750, tend to be very fatiguing for the operator. The operator is constantly readjusting for boom disturbance caused by unstable vehicle movement. The Applicant asserts that even if the ground engaging members 23 of Weston `750 were deliberately set to engage the ground and force the boom to a specific angle, the process of doing so would be impractical. The currently claimed application does not rely on ground measuring devices, ground engaging members or operator reflexes to adjust the angular relation between the boom and the ground.

In order to emphasize the above noted distinctions between the presently claimed invention and the applied art, the independent claims of this application now recite the features of "[a]n all terrain vehicle chemical applicator, comprising. . .an elongate frame. . .six independent support wheels. . .suspension for each of the support wheels. . .a chemical applicator mounting platform pivotally secured to the frame on which are mounted chemical applicators, extendible actuators being provided between the chemical applicator mounting platform and the frame to position the chemical applicator mounting platform in an operator selected orientation relative to the terrain; and an automatic motion dampening control system" Such features are believed to clearly and patentably distinguish the presently claimed invention from all of the art of record, including the applied art. ◆◆

Next, claims 3 and 8 are rejected, under 35 U.S.C. § 103, as being unpatentable over Weston `750 and Ericksson `181 in view of Takata `311. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the following remarks.

The Applicant acknowledges that the additional reference of Takata `311 may arguably relate to the features indicated by the Examiner in the official action. Nevertheless, the Applicant respectfully submits that the combination of the base reference with this additional art still fails to in any way teach, suggest or disclose the above distinguishing features of the presently claimed invention. As such, all of the raised rejections should be withdrawn at this time in view of the above amendments and remarks.

Lastly, claim 5 is rejected, under 35 U.S.C. § 103, as being unpatentable over Weston '750 and Ericksson '181 in view of Stuart '077. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the following remarks.

As noted by the Examiner, the Stuart '077 reference combines air bags 13 with shock absorbers 17. As taught in the Stuart '077 reference, the shock absorbers 17 are resistive to both compression and extension and serve to control air bag induced movement (see column 3, lines 7-14). That is, the air bags of Stuart '077 are used in the conventional sense as air springs. In contrast, as claimed in the present application, extendible actuators are used to set the orientation of the vehicle and the air bags are used to absorb impacts once in the selected orientation. As claimed, the air bags of the current application are in fluid communication with each other. With this arrangement, the air bags can transfer load from one axle to another allowing the suspension to yield to an obstacle without undue increased resistance between the frame and the swing arm. This allows contact points of the vehicle to take the form of the terrain. By separating this system from the incline system, the Applicant is able to differentiate between the differences of obstacle clearance such as rocks and alterations in the incline of the terrain.

In addition, the Applicant employs two systems to compensate for alterations in the ground surface. The air bags accommodate surface roughness and the hydraulic system accommodate for surface incline. The hydraulic system best handles the small accurate adjustments required to accommodate for the typically gradual changes in overall incline. Air bag suspension has the speed of retraction time required to accommodate for surface roughness. These two systems serve to back each other up, in case one system happens to fail, the vehicle will be able to maintain partial vehicle stability. The Applicant has, accordingly, amended claim 5 to distinguish over the combination which includes the Stuart '077 reference.

In order to emphasize the above noted distinctions between the presently claimed invention and the applied art, claim 5 of this application has been amended to now recite the

features of "extendible actuators are provided to adjust a height of the suspension relative to the frame and the at least one shock absorber is at least one air bag which is adapted to absorb shock impacts". Such features are believed to clearly and patentably distinguish the presently claimed invention from all of the art of record, including the applied art. ↵

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Weston `750, Ericksson `181, Takata `311. and/or Stuart `077 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

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In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,



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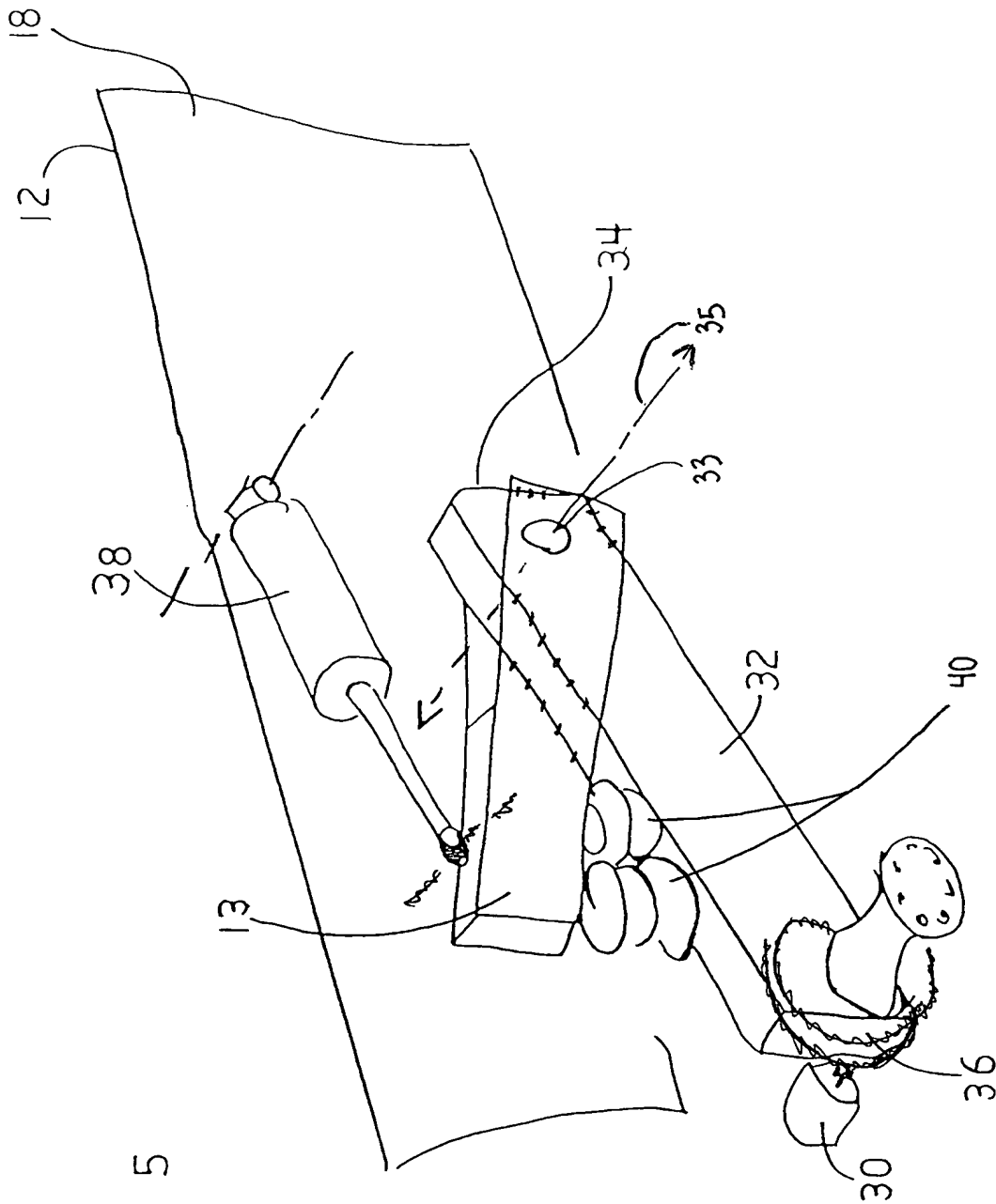


FIG 5